

National Plan on Ocean and Coastal Mapping (OCM) - Long-term Plans/Directions for OCM

86th Coastal Engineering Research Board Meeting

Data is critical infrastructure for managing coastal water resource systems

San Diego, CA

3 June 2009

Jennifer M. Wozencraft

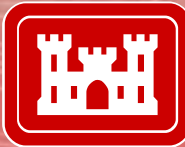
Director, Joint Airborne Lidar Bathymetry Technical Center of Expertise

ERDC / CHL





IWG-OCM established



- established by the Joint Subcommittee on Ocean Science and Technology (JSOST) of the National Science and Technology Council (NSTC) Committee on Environment and Natural Resources (CENR) and Committee on Science (CS)
- in response to recommendations of the U.S. Ocean Action Plan and the 2004 National Research Council report, A Geospatial Framework for the Coastal Zone: National Needs for Coastal Mapping and Charting





Activities prescribed by the U.S. Ocean Action Plan



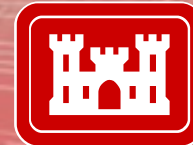
- development of an **annual inventory** of Federal, Federally-funded, and non-Federal governmental ocean and coastal mapping and charting programs, operations, and prioritized needs;
- assessment and reporting on **common and shared needs** for development of coordinated programs;
- **coordinate and leverage resources and efforts** across the Federal sector and with industry, academic, NGO, and non-Federal government entities;
- set priorities for **standards development** and developing strategies for promulgation of standards for data acquisition, data, metadata, tools and products;
- assessing and reporting on **research and development needs** for more effective development, delivery, and application of ocean and coastal mapping data, tools, products, and services; and
- development of shared and standardized mechanisms for processing, archiving, and **distribution of ocean and coastal mapping data**, tools, products, and services.





IWG-OCM Inventory Workshop

September 2007

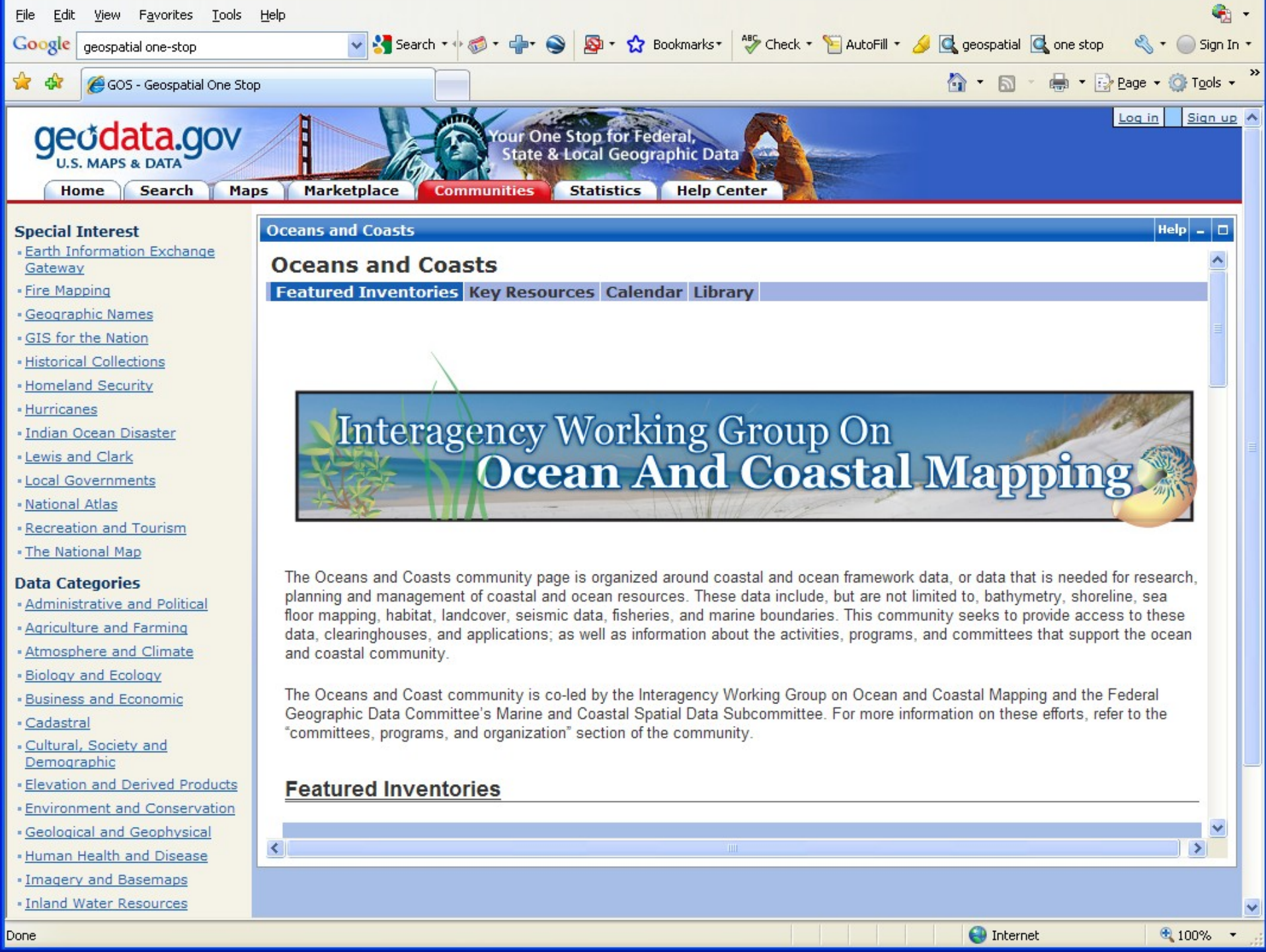


GOAL: provide a clearinghouse for data and interpretive information, and a registry of completed and projected mapping activities, that will reduce duplication of efforts and enable cooperative activities

OUTCOMES: adoption of Geospatial One Stop as the tool to build the OCM Inventory

1. Raised awareness: 25,000 metadata records input to GOS during FY2008
2. Improved the discoverability of OCM records through geographic and query search wizard by working with GOS team
3. Metadata guidance for improved performance:
 - how to get metadata harvested
 - how metadata needs to be written to be discoverable within GOS
 - how metadata needs to be written so that the GOS listings will provide users with enough information to evaluate the metadata







IWG-OCM Inventory



Next steps:

1. The three efforts above will continue: raising awareness, improving GOS, and helping people work the system
2. Assess staffing strategy: volunteer vs dedicated
3. USGS is working with NGDC on a marine gazetteer project that will make GOS geographic search functionality work better for OCM regions



“ Building Strong ”

IOCM Community VISION

VISION THEMES

CORE PURPOSE

To promote the efficient and effective development and application of ocean and coastal mapping to support informed decision-making.

VALUES/ GUIDING PRINCIPLES

- Communication
- Coordination
- Collaboration
- Community

- Commitment
- Partnerships
- Integrate & balance
- Communicate & demonstrate our value

February 2008
Multi-agency
Multi-discipline
Federal
State
Academia
Industry
Users

- Leveraging off
- Guided by customer needs
- Emerging technologies
- Agency cooperation & collaboration
- Congressional interest & support
- Standards for interoperability

I MODEL OF SUCCESS
Describe a scalable project-oriented model that demonstrates the creation of an integrated coastal and ocean mapping program

II TOOL DEVELOPMENT
Identify tools required to promote the development & application of coastal mapping to support decision-making

III COMMUNITY BUILDING
Increase awareness, build advocacy & support implementation of IOCM

ASSUMPTIONS

- The National OCM Community is a powerful force in advancing national ocean & coastal mapping.

- NO NEW Funding within the next 3 - 5 years

DESCRIPTION OF THE FUTURE

- Long-term sustainable programs that support our scientific missions & programs
- A significant increase in the pace of coastal & sea-floor mapping through federal-state cooperation & partnerships to meet public needs.
- One stop state discovery
- Mapping is seen as a critical tool for informed decision-making
- Map Once - use & fuse many times!
- Increasing stewardship for the ocean environment

CHALLENGES

- Federal bureaucracy & agency buy-in
- Cultural & language differences
- Funding
- Change is hard



IOCM Community VISION

● CORE PURPOSE

To promote the efficient and effective development and application of ocean and coastal mapping to support informed decision-making.

● VALUES/ GUIDING PRINCIPLES

- Communication
- Coordination
- Collaboration
- Community efforts will result in more, better mapping

• Each agency and organization is dedicated to its own mission and the work to achieve that mission.

• We are committed to working together to leverage resources, share expertise, avoid duplication and achieve better results.

- Commitment
- Partnerships

• Leveraging off each other's efforts

• Application driven

• Guided by customer needs

• Emerging technologies

● VISION THEMES

- Integrate & balance
- Communicate & demonstrate our value
- Agency cooperation & collaboration
- Congressional interest & support
- Standards for interoperability

I MODEL OF SUCCESS

Describe a scalable project-oriented model that demonstrates the benefit of an integrated coastal and ocean mapping program

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Identify tools required to promote the development & application of ocean & coastal mapping to support decision-making

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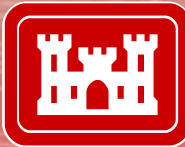
● DESCRIPTION OF THE FUTURE

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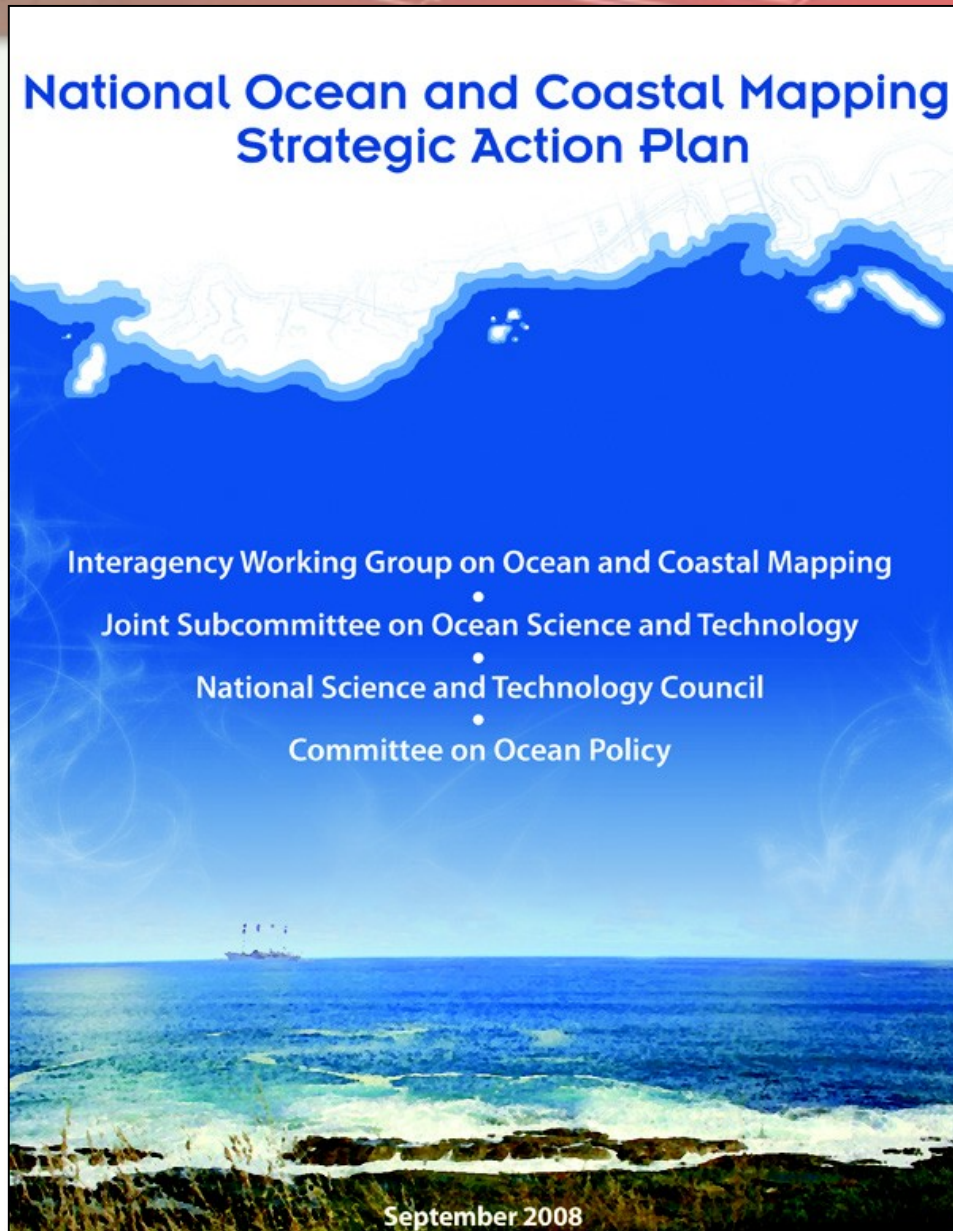
● CHALLENGES

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- Guides a common direction to address the needs of the ocean and coastal mapping community
- Based on coordination, communication, and partnerships
- Recognizes the need to Communicate and Demonstrate value





Common Specifications for Airborne Coastal Mapping and Charting Data

- January 2009 interagency workshop supporting IWG-OCM and the CMTS
- GOALS:
 - Communicate agency requirements
 - Develop consensus around appropriate specification elements
 - Identify required metadata elements



F42						
	A	B	C	D	E	F
1	Data Description (metadata)					
2						
3	General	NAVOCEANO	USACE	NOAA	USGS	Other
4	Sensor Information					
5	sensor type	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
6	sensor serial number	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
7	sensor calibration date	most recent lab and in situ c	most recent lab and in situ c	most recent lab and in situ c	most recent lab and in situ calibrations with supporting documentation	
8	sensor offsets (lever arms)	contained in .prm file	describe in metadata	describe in metadata, absol	contained in ops_conf.i file	
9	Collection Information					
10	environmental observations	relevant to processing	relevant to processing	relevant to processing	relevant to processing	
11	acquisition date / time	included in .hof file	each shot	describe in metadata	each laser shot	
12	horizontal datum of acquisit	WGS84	NAD83	NAD83	WSG84(G1150)	
13	vertical datum of aquisition	WGS84	NAD83	NAD83	WSG84(G1150)	
14	metadata standard	open for discussion	FGDC	open for discussion	FGDC	
15						
16	Hydrographic Lidar	NAVOCEANO	USACE	NOAA	USGS	Other
17	Sensor Information					
18	scanner type	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
19	PRF	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
20	pulse width	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
21	Collection Information					
22	swath width	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
23	swath overlap	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
24	scan angle	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
25	scan rate	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
26	flying height (AGL)	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
27	peak transmitted laser power	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
28	beam divergence	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
29	tide-coordinated (y/n)	shoreline runs	shoreline runs	as specified in project instru	PDOP Coordinated	
30	horizontal shot spacing	3 m X 3 m	5 m	2x2m @ 100% or 3x3m @ 200%	1m x 1m	
31						
32	Topgraphic Lidar	NAVOCEANO	USACE	NOAA	USGS	Other
33	Sensor Information					
34	scanner type	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
35	PRF	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
36	pulse width	describe in metadata	describe in metadata	describe in metadata	describe in metadata	
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Common Specifications for Airborne Coastal Mapping and Charting Data

- OUTCOMES:
 - Draft survey specifications based on survey type
 - Metadata template
 - QA/QC recommendations
 - Waveform lidar format





GOVERNORS' ACTION PLAN II

For Healthy and
Resilient Coasts

2009 - 2014

Gulf of Mexico Master Mapping Plan

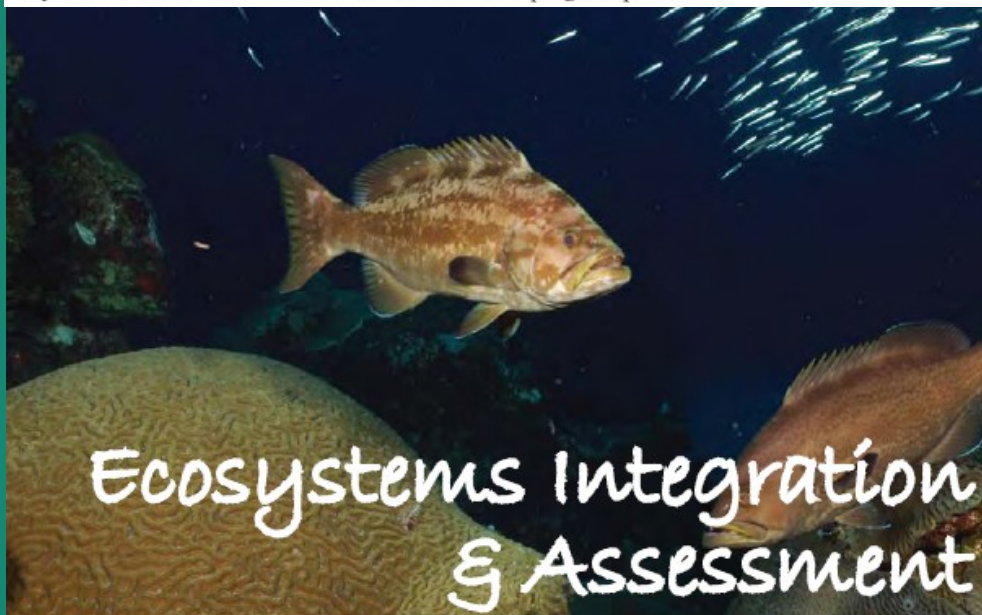
► **Alliance Action:** Produce the Gulf of Mexico Master Mapping Plan (GMMMP), a comprehensive plan to collaboratively acquire data on the physical characteristics of the Gulf region, particularly elevation, shoreline, and surface data.

Action Steps:

1. Identify mapping needs and requirements to allow for informed coastal management decisions and data gap analysis.
2. Conduct an inventory of the capabilities and data assets of existing mapping programs and leverage ongoing efforts by the Interagency Working Group on Ocean and Coastal Mapping.
3. Develop a collaborative strategy to acquire the necessary region-wide physical characteristic data.

Why?

The Gulf is too large for any one agency to map, thus a collaborative approach is required; one that identifies and fulfills all mapping requirements with ongoing mapping programs. Therefore, by aligning data collection methods and sharing resources, critical mapping information can be collected at a lower cost to the program partners.



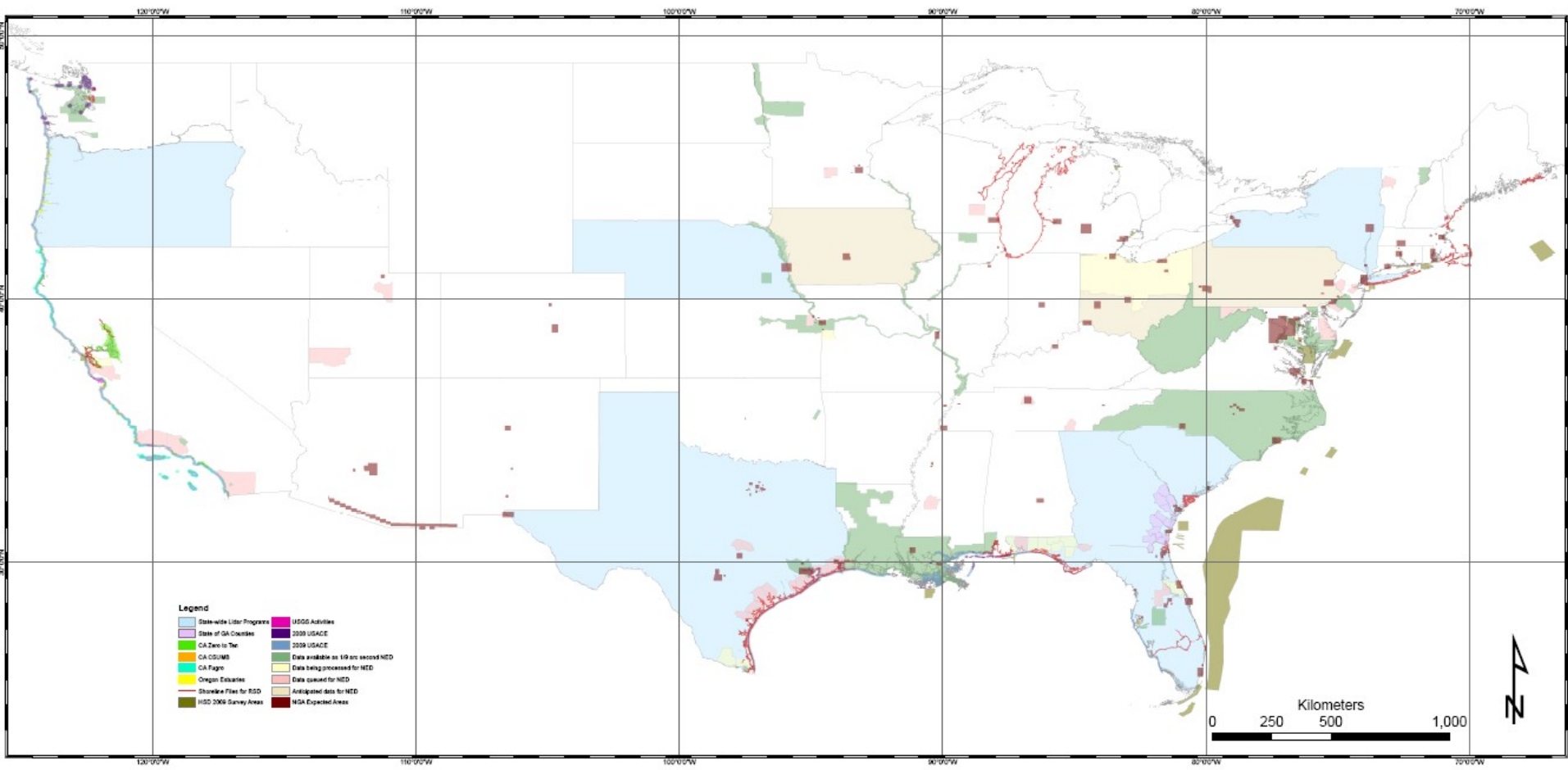
Ecosystems Integration
& Assessment



Mapping coordination meeting



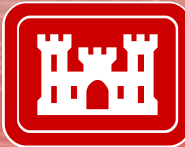
- FY09/FY10/ARRA funded mapping activities





H.R. 146, TITLE XII, SUBTITLE B

Ocean and Coastal Mapping Integration Act



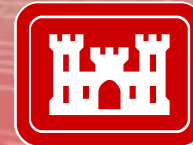
- develop a coordinated and comprehensive Federal ocean and **coastal mapping plan** for the Great Lakes and coastal state waters, the territorial sea, the exclusive economic zone, and the continental shelf of the United States that enhances **ecosystem approaches** in decision-making for conservation and management of marine resources and habitats, establishes research and mapping priorities, supports the siting of research and other platforms, and advances ocean and coastal science





H.R. 146, TITLE XII, SUBTITLE B

Ocean and Coastal Mapping Integration Act



Reporting requirements (18 months + biennially thereafter)

- an **inventory** of ocean and coastal mapping data (age, source, spatial resolution)
- identification of **priority areas** in need of survey coverage with resource plan
- the status of efforts to produce **integrated digital maps** of ocean and coastal areas;
- a description of any **products** resulting from coordinated mapping efforts
- documentation of **minimum and desired standards** for data acquisition and integrated metadata;
- status of Federal efforts to **leverage mapping resources** and activities
- define **resource requirements** for organizations to meet the goals of the program
- status of efforts to **declassify data** gathered by the Navy and NGA
- status of efforts to coordinate Federal programs with **state and local programs**
- description of efforts of Federal agencies to **increase contracting**
- an inventory and description of any **new Federal or federally funded programs** conducting shoreline delineation and ocean or coastal mapping since the previous reporting cycle





A vision for the future



- A broad OCM community
- A clear understanding of information required by ocean and coastal decision-makers and resource managers
- A comprehensive, coordinated, long-term, sustainable OCM program providing the basic data and derived information products at appropriate scales and time intervals to support ecosystem-based approaches to resource management
- One-stop data and product discovery





Questions?



“ Building Strong “